AMENDMENTS TO THE CLAIMS

1.-40. (Canceled)

41. (Previously presented) A color and fluorescence endoscopy video system including:

an endoscope for directing the light from a multi-mode light source into a patient to illuminate a tissue sample and to collect reflected light or fluorescence light produced by the tissue;

a camera positioned to receive the light collected by the endoscope to produce color or fluorescence images, the camera including:

a low light color image sensor having integrated filters with color output;

one or more filters positioned in front of the low light color image sensor for selectively blocking light with wavelengths below 450 nm and transmitting visible light with wavelengths greater than 470 nm; and

one or more optical imaging components that project images onto the low light color image sensor;

an image processor/controller that receives image signals from the low light color image sensor and combines and interpolates image signals from pixels having filters with the same integrated filter characteristics to fluorescence or reflectance light and then encodes the images as video signals;

a multi-mode light source for producing light for color imaging and/or for fluorescence excitation and/or for fluorescence excitation with reference reflectance, including a filter selectively positioned in the light path of the light source for producing light for color imaging that simultaneously transmits blue light at wavelengths less than 480 nm and amounts of green and red light, wherein the amounts of green and red light transmitted are adjusted to be a fraction

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of the transmitted blue light, such that, when reflected from a gray surface, the intensity of the green and red light projected onto the low light color image sensor matches the intensity of blue light also projected onto the low light color image sensor in such a way that the resulting color images are white balanced; and

a color video monitor for displaying superimposed video images from the pixels of the low light color image sensor.

42. (Original) The system of Claim 41, wherein the camera is attached to the portion of the endoscope that remains outside of the body.

43. (Original) The system of Claim 41, wherein the camera is built into the insertion portion of the endoscope.

44. (Previously presented) The system of Claim 42 or 43, further comprising a light source filter selectively positioned in the light path of the light source for producing light for fluorescence excitation and reference reflection that simultaneously transmits the fluorescence excitation light at wavelengths less than 450 nm and an amount of reference reflectance light not in a fluorescence detection wavelength band, wherein the amount of reference reflectance light transmitted is a fraction of the fluorescence excitation light, such that the intensity of the reflected reference light projected onto the low light color image sensor approximately matches the intensity of fluorescence light also projected onto the low light color image sensor, the light source filter also blocking light from the light source at wavelengths in the fluorescence detection wavelength band such that the fluorescence light received by the low light color image sensor is substantially composed of light resulting from tissue fluorescence and minimally composed of light originating from the light source.

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45. (Previously presented) The system of Claim 44, wherein the fluorescence light, transmitted by the one or more filters positioned in front of the low light color image sensor, is green light.

46. (Currently amended) The system of Claim 44, wherein the fluorescence light, transmitted by ~~at least one~~ the one or more filters positioned in front of the low light color image sensor, is red light.

47. (Original) The system of Claim 45, wherein the reference reflectance light, not in the detected fluorescence band, transmitted by the light source filter is red light.

48. (Original) The system of Claim 47, wherein the image processor/controller produces a composite fluorescence/reflectance image comprising an image created from green fluorescence light and an image created from red reflectance light that are superimposed and displayed in different colors on a color video monitor.

49. (Original) The system of Claim 46, wherein the reference reflectance light, not in the detected fluorescence band, transmitted by the light source filter is green light.

50. (Original) The system of Claim 46, wherein the image processor/controller produces a composite fluorescence/reflectance image comprising an image created from red fluorescence light and an image created from green reflectance light that are superimposed and displayed in different colors on a color video monitor.

51. (Original) The system of Claim 42 or 43, further comprising a filter positioned in the light path of the light source that transmits fluorescence excitation light at wavelengths less than 450 nm and blocks light at visible wavelengths longer than 450 nm, from reaching the low light color image sensor to the extent that the light received by the low light color image sensor is substantially composed of light resulting from tissue fluorescence and minimally composed of light originating from the light source.

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52. (Original) The system of Claim 51, wherein the image processor/controller produces a composite fluorescence/reflectance image comprising an image created from green fluorescence light and an image created from red fluorescence light that are superimposed and displayed in different colors on a color video monitor.

53. (Canceled)

54. (Previously presented) The system of Claim 41 wherein the image processor/controller produces a composite color image comprising red reflectance light, green reflectance light, and blue reflectance light images that are superimposed and displayed respectively on red, green, and blue channels of a color video monitor, when the light source filter for producing light for color imaging is inserted into the light path of the light source.

55.-58. (Canceled)

59. (Currently amended) A color and fluorescence endoscopy video system including:

an endoscope for directing the light from a multi-mode light source into a patient to illuminate a tissue sample and to collect reflected light or fluorescence light produced by the tissue;

a camera positioned to receive the light collected by the endoscope to produce color or fluorescence images, the camera including:

a low light color image sensor having integrated filters with color output;

one or more filters positioned in front of the low light color image sensor for selectively blocking light with wavelengths below 450 nm and transmitting visible light with wavelengths greater than 470 nm; and

one or more optical imaging components that project images onto the low light color image sensor;

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an image processor/controller that receives image signals from the low light color image sensor and combines and interpolates image signals from pixels having filters with the same integrated filter characteristics to fluorescence or reflectance light and then encodes the images as video signals;

a multi-mode light source for producing light for color imaging and/or for fluorescence excitation and/or for fluorescence excitation with reference reflectance, including a light source filter selectively positioned in the light path of the light source that simultaneously transmits the fluorescence excitation light at wavelengths less than 450 nm and an amount of reference reflectance light not in a fluorescence detection wavelength band, wherein the amount of reference reflectance light transmitted is a fraction of the fluorescence excitation light, such that the intensity of the reflected reference light projected onto the low light color image sensor is approximately matched to the intensity of fluorescence light also projected onto the low light color image sensor, the light source filter also blocking light from the light source at wavelengths in the fluorescence detection wavelength band such that the fluorescence light received by the low light color image sensor is substantially composed of light resulting from tissue fluorescence and minimally composed of light originating from the light source; and

a color video monitor for displaying superimposed video images from the pixels of the low light color image sensor.

60. (Previously presented) The system of Claim 59, wherein the camera is attached to the portion of the endoscope that remains outside of the body.

61. (Previously presented) The system of Claim 59, wherein the camera is built into the insertion portion of the endoscope.

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62. (Previously presented) The system of Claim 59, wherein the fluorescence light, transmitted by the one or more filters positioned in front of the low light color image sensor, is green light

63. (Previously presented) The system of Claim 59, wherein the fluorescence light, transmitted by the one or more filters positioned in front of the low light color image sensor, is red light.

64. (Previously presented) The system of Claim 62, wherein the reference reflectance light, not in the detected fluorescence band, transmitted by the light source filter is red light.

65. (Previously presented) The system of Claim 64, wherein the image processor/controller produces a composite fluorescence/reflectance image comprising an image created from green fluorescence light and an image created from red reflectance light that are superimposed and displayed in different colors on a color video monitor.

66. (Previously presented) The system of Claim 63, wherein the reference reflectance light, not in the detected fluorescence band, transmitted by the light source filter is green light.

67. (Previously presented) The system of Claim 66, wherein the image processor/controller produces a composite fluorescence/reflectance image comprising an image created from red fluorescence light and an image created from green reflectance light that are superimposed and displayed in different colors on a color video monitor.

68. (Previously presented) The system of Claim 60 or 61, further comprising a filter selectively positioned in the light path of the light source that transmits fluorescence excitation light at wavelengths less than 450 nm and blocks light at visible wavelengths longer than 450 nm, from reaching the low light color image sensor to the extent that the light received by the low light color image sensor is substantially composed of light resulting from tissue fluorescence and minimally composed of light originating from the light source.

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69. (Previously presented) The system of Claim 68, wherein the image processor/controller produces a composite fluorescence/reflectance image comprising an image created from green fluorescence light and an image created from red fluorescence light that are superimposed and displayed in different colors on a color video monitor.

70. (Previously presented) The system of Claim 60 or 61, further comprising a filter selectively positioned in the light path of the light source for producing light for color imaging that simultaneously transmits blue light at wavelengths less than 480 nm and amounts of green and red light, wherein the amounts of red and green light transmitted are adjusted to be a fraction of the transmitted blue light, such that, when reflected from a gray surface, the intensity of the green and red light projected onto the low light color image sensor matches the intensity of blue light also projected onto the low light color image sensor in such a way that the resulting color images are white balanced.

71. (Previously presented) The system of Claim 59, wherein the image processor/controller produces a composite color image comprising red reflectance light, green reflectance light, and blue reflectance light images that are superimposed and displayed respectively on red, green, and blue channels of a color video monitor.

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